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| 23505 | 7590 | 08/19/2010 | EXAMINER | |
| CONLEY ROSE, P.C. | | | WARE, DEBORAH K | |
| David A. Rose | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pathou@conleyrose.com

Office Action Summary

Application No.

10/520,294

Applicant(s)

PAUL, BERNARD

Examiner

DEBBIE K. WARE

Art Unit

1651

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4 and 16-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4 and 19-22 is/are rejected.
- 7) ☒ Claim(s) 16-18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-08)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 1, 3-4, and 16-22 are presented for reconsideration on the merits.

Response to Amendment

The Amendment and extension of time filed May 25, 2010, have been received and entered. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-4, and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO, discussed above, in view of Bruneteau et al, da Luz and Shanmuganathan, all cited of record.

Claims are drawn to methods for biocontrol of cryptogamic vine disease (e.g. Botrytis fungal pathogen) consisting of applying to a vine having the disease a mixture containing at least one bacterium and at least one yeast and an inert vehicle wherein the bacterium is selected from *Bacillus subtilis* and the yeast is selected from *Pichia* genus. Claims are further drawn to methods for biocontrolling a cryptogamic vine disease consisting of *Bacillus megaterium*, *Debaryomyces*, specific concentrations of yeast and bacterium and application by spraying.

WO teaches methods for biocontrol of cryptogamic vine disease (p. 9, line 9, e.g. Botrytis fungal pathogen) applying to a vine having the disease a mixture containing at least one bacterium and at least one yeast (see abstract, p. 5, lines 15-32) and an inert vehicle (p. 4, lines 25-31; p. 5, line 23; p. 8, lines 24-32 and p. 9, lines 1-21) wherein the bacterium can be selected from *Bacillus subtilis* (p. 3, line 16) and the yeast is selected from *Pichia* genus (p. 3, line 9; p. 5, line 30). Botrytis is disclosed at p. 9, line 9, which is a mold that effects aerial surfaces, which includes the vine of crop plants, including fruit, or their products. Mangoes are disclosed to be treated at p. 10, line 27; and grapes of Cabernet variety at p. 11, line 27.

Bruneteau et al teach sphingolipids effective for treating cryptogamic vine disease (e.g. Botrytis fungal pathogen) on tomato. Further, disclosed is that the sphingolipids are derived from at least one yeast isolate and at least one bacterium, note col. 4, lines 39-45 and col. 5, lines 47 and 53; and col. 6, line 19. Furthermore, the application of the composition can be by spraying.

da Luz teach biocontrol of fungal pathogens of crops using *Bacillus megaterium*, see abstract, all lines.

Shanmuganathan teach biocontrol of fungal pathogens of crops using *Debaryomyces* yeast, note col. 2, line 15.

The claims differ from Bruneteau in that a mixture of bacterium and yeast isolate(s), specific concentrations and ratio thereof, and particular genera thereof are not disclosed.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to replace the sphingolipids of Bruneteau et al with the yeast and bacterium mixture in a concentration and ratio, thereof disclosed by WO; and further selecting from *Bacillus megaterium* and Shanmuganathan, as disclosed by da Luz and Shanmuganathan, for use in the mixture and spraying to biologically control a cryptogamic vine disease for crops such as tomato, grape vine and other fruits of the vine. Each of the cited references teach the claimed features and each of da Luz and Shanmuganathan teach biocontrol of fungal pathogens using the *B. megaterium* species and *Dabaryomyce* yeast. Thus, to select isolated strains thereof for the same purpose and intended use is prima facie obvious over the cited prior art. Applicants have shown no difference between the strains of the cited prior art and those claimed herein. In the absence of a side by side comparison these claims to the strains are rendered prima facie obvious.

Also to select particular concentrations is clearly within the skill of an ordinary artisan because WO teaches at page 11, line 23, the 10^{10} concentrations of yeast and

bacteria as disclosed are very close to the concentrations optionally required by the claimed method. Also a one to one mixture clearly suggests an equal mixture of yeast and bacteria, thus, a 50/50 ratio is suggested and would have been expected to provide successful results for a mixture of bacteria and yeasts. Botrytis is clearly disclosed, and a method for treating cryptogamic vine disease is clearly taught as well. One of skill in the art would have been motivated to select for these bacteria and yeasts for which to provide in a mixture with a carrier (e.g. inert carrier) to treat the disease. In the absence of unexpected successful results the claims are rendered prima facie obvious.

Response to Arguments

Applicant's arguments filed May 25, 2010, have been fully considered but they are not persuasive. The argument that WO'950 discloses a fermentation broth containing lactobacilli and yeasts, ethanol, lactic and acetic acid, sucrose or molasses, flour, other microorganisms, etc., is noted. However, WO'950 clearly discloses a yeast component which can be selected from Pichia, page 5, line 30 and bacteria, which are well known to treat fruit disease. Also the argument that there is not disclosure in WO '950 of applying the mixture to a vine is noted, however, WO'950 clearly discloses applying the mixture to surfaces to treat Botrytis, see p. 9, line 9, which is a mold that effects aerial surfaces, which includes the vine of crop plants, including fruit, or their products. Mangoes are also treated. To apply the mixture to the vine is an obvious modification of the cited prior art.

WO'950 clearly teaches in the background art that Bacillus subtilis is well known to treat fruit diseases. Thus, to provide for a mixture consisting of yeast and bacteria,

selected from the claimed genera and species, is well within the purview of an artisan. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Although WO'950 recognized certain bacteria for beneficial use in their invention the reference clearly suggests *Bacillus subtilis* as claimed herein can be used to treat fruit disease. Furthermore, the yeast can be selected from *Pichia* and WO'950 clearly works using this species, therefore, it would have been an obvious modification to combine *Pichia* with *Bacillus subtilis* with the expectation of successful results since the yeast is used in WO'950 invention and is recognized to be advantageous. The sourdough mixture is irrelevant to the claimed invention because it is the whole teaching of the cited reference which would have provided the disclosure and motivation for one of skill in the art to select a mixture which would have been expected to provide the successful result of treating a vine for cryptogamic disease such as *Boytrix*, also disclosed by WO'950.

The secondary cited prior art clearly teaches the features as claimed. Notably, da Luz teach biocontrol of fungal pathogens of crops using *Bacillus megaterium*, see abstract, all lines. Shanmuganathan teach biocontrol of fungal pathogens of crops using *Debaryomyces* yeast, note col. 2, line 15. Furthermore to select the claimed concentrations of yeast and bacteria as claimed is clearly a matter of routine

optimization in the art by one of ordinary skill in the art. Further to select a 50/50 ratio mixture of yeast and bacteria is well within the purview of a skilled artisan.

Claims 16-18 are objected to for being dependent upon rejected base claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

All claims fail to be patentably distinguishable over the state of the art discussed above and cited of record. Therefore, the claims are properly rejected.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEBBIE K. WARE whose telephone number is (571)272-0924. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Deborah K. Ware/
Deborah K. Ware
Primary Examiner
Art Unit 1651